AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method ~~Method~~ of segmenting an object of interest in a data set, wherein the data set comprises at least a first image and a second image, the method comprising the steps of:

segmenting the object of interest with a processor in the first image for determining a first segmentation result;

determining a first structure of the object of interest where the segmentation is unsuccessful in the first image; and

~~continuing a segmentation of~~ segmenting the first structure in a first region of the second image for determining a second segmentation result;

wherein the first region is a local vicinity of the first structure.

2. (Original) The method of claim 1,

wherein the first and second images relate to at least one of different points of time, different projections and different phases of a movement; and

wherein the first and second segmentation results are used for generating an image such that the image is based on information of the first image and the second image.

3. (Currently amended) The method of claim 2,

wherein the data set is multi-dimensional and comprises data relating to a plurality of phases of the object of interest which is moving;

wherein the segmentation of the object of interest starts in a first initial phase of the plurality of phases using data relating to the first initial phase;

wherein, in case the segmentation fails for the first structure of the object of interest, the segmentation is continued in the first region in a second phase of the plurality of phases using data relating to the second phase;

wherein the second phase is adjacent to the initial phase;

wherein, in case the segmentation of a second structure of the object of interest in the second phase using data relating to the second phase is unsuccessful, the segmentation continues in a second region of a third phase using data relating to the third phase;

wherein the third phase is adjacent to the second phase; and

wherein the second region covers a vicinity of the second structure.

4. (Original) The method of claim 1, wherein the data set comprises the first image, the second image and a third image, wherein the second image is adjacent to the first image in a first direction with respect to a phase of the object of interest which is moving, wherein the third image is adjacent to the first image in a second direction with respect to the phase of the object of interest, wherein the first direction is opposite to the second direction, the method further comprising the step of:

selecting a third direction of the first and second direction;

wherein, when the first direction is selected, the segmentation of the first structure is performed in the second image; and

wherein, when the second direction is selected, the segmentation of the first structure is performed in the third image.

5. (Currently amended) The method of claim 1,

wherein the data set is a coronary CTA volume data set comprising data from a plurality of cardiac phases; and

wherein the first and second images are at least two-dimensional; and wherein the method is for the segmentation of a coronary artery tree.

6. (Currently amended) An image ~~Image~~ processing device, comprising:

a memory for storing a data set comprising at least a first image and a second image; and

an image processor for performing a segmentation of an object of interest in the data set; wherein the image processor is adapted to perform the following operation:

segmenting the object of interest in the first image for determining a first segmentation result;

determining a first structure of the object of interest where the segmentation is unsuccessful in the first image; and

~~continuing a segmentation of~~ segmenting the first structure in a first region of the second image for determining a second segmentation result;

wherein the first region is a local vicinity of the structure.

7. (Original) The image processing device of claim 6,

wherein the first and second images relate to at least one of different points of time, different projections and different phases of a movement; and

wherein the first and second segmentation results are used for generating an image such that the image is based on information of the first image and the second image.

8. (Currently amended) The image processing device of claim 6, wherein the data set is multi-dimensional and comprises data relating to a plurality of phases of the object of interest which is moving;

wherein the segmentation of the object of interest starts in a first initial phase of the plurality of phases using data relating to the first initial phase;

wherein, in case the segmentation fails for the first structure of the object of interest, the segmentation is continued in the first region in a second phase of the plurality of phases using data relating to the second phase;

wherein the second phase is adjacent to the initial phase;

wherein, in case the segmentation of a second structure of the object of interest in the second phase using data relating to the second phase is unsuccessful, the segmentation continues in a second region of a third phase using data relating to the third phase; and

wherein the third phase is adjacent to the second phase; wherein the second region covers a vicinity of the second structure.

9. (Currently amended) A computer-readable storage medium containing instructions, that that when executed on a processor of a computer, segment ~~Computer program for segmenting~~ an object of interest in a data set, wherein the data set comprises at least a first image and a second image, wherein [[a]] the processor performs the following operation when the ~~computer program is~~ instructions are executed on the processor[[;]];

segmenting the object of interest in the first image for determining a first segmentation result;

determining a first structure of the object of interest where the segmentation is unsuccessful in the first image; and

~~continuing a segmentation of~~ segmenting the first structure in a first region of the second image for determining a second segmentation result;

wherein the first region is a local vicinity of the structure.

10. (New) The image processing device of claim 6, wherein the data set comprises the first image, the second image and a third image, wherein the second image is adjacent to the first image in a first direction with respect to a phase of the object of interest which is moving, wherein the third image is adjacent to the first image in a second direction with respect to the phase of the object of interest, wherein the first direction is opposite to the second direction, the method further comprising the step of:

selecting a third direction of the first and second direction;

wherein, when the first direction is selected, the segmentation of the first structure is performed in the second image;

wherein, when the second direction is selected, the segmentation of the first structure is performed in the third image.

11. (New) The image processing device of claim 6,

wherein the data set is a coronary CTA volume data set comprising data from a plurality of cardiac phases;

wherein the first and second images are at least two-dimensional; and

wherein the method is for the segmentation of a coronary artery tree.

12. (New) The computer-readable storage medium of claim 9,

wherein the first and second images relate to at least one of different points of time, different projections and different phases of a movement; and

wherein the first and second segmentation results are used for generating an image such that the image is based on information of the first image and the second image.

13. (New) The computer-readable storage medium of claim 12, wherein the data set is multi-dimensional and comprises data relating to a plurality of phases of the object of interest which is moving;

wherein the segmentation of the object of interest starts in a first initial phase of the plurality of phases using data relating to the first initial phase;

wherein, in case the segmentation fails for the first structure of the object of interest, the segmentation is continued in the first region in a second phase of the plurality of phases using data relating to the second phase;

wherein the second phase is adjacent to the initial phase;

wherein, in case the segmentation of a second structure of the object of interest in the second phase using data relating to the second phase is unsuccessful, the segmentation continues in a second region of a third phase using data relating to the third phase;

wherein the third phase is adjacent to the second phase; and

wherein the second region covers a vicinity of the second structure.

14. (New) The computer-readable storage medium of claim 9, wherein the data set comprises the first image, the second image and a third image, wherein the second image is adjacent to the first image in a first direction with respect to a phase of the object of interest which is moving, wherein the third image is adjacent to the first image in a second direction with respect to the

phase of the object of interest, wherein the first direction is opposite to the second direction, the method further comprising the step of:

selecting a third direction of the first and second direction;

wherein, when the first direction is selected, the segmentation of the first structure is performed in the second image; and

wherein, when the second direction is selected, the segmentation of the first structure is performed in the third image.

15. (New) The computer-readable storage medium of claim 9,

wherein the data set is a coronary CTA volume data set comprising data from a plurality of cardiac phases; and

wherein the first and second images are at least two-dimensional; and wherein the method is for the segmentation of a coronary artery tree.

16. (New) The method of claim 1, wherein segmenting the object of interest is started from one or more user-defined start points.

17. (New) The method of claim 1, wherein segmenting the object of interest is started from one or more automatically extracted start points.

18. (New) The image processing device of claim 6, wherein segmenting the object of interest is started from one or more user-defined start points.

19. (New) The image processing device of claim 6, wherein segmenting the object of interest is started from one or more user-defined start points.

20. (New) The computer-readable storage medium of claim 9, wherein segmenting the object of interest is started from one or more user-defined or automatically extracted start points.